

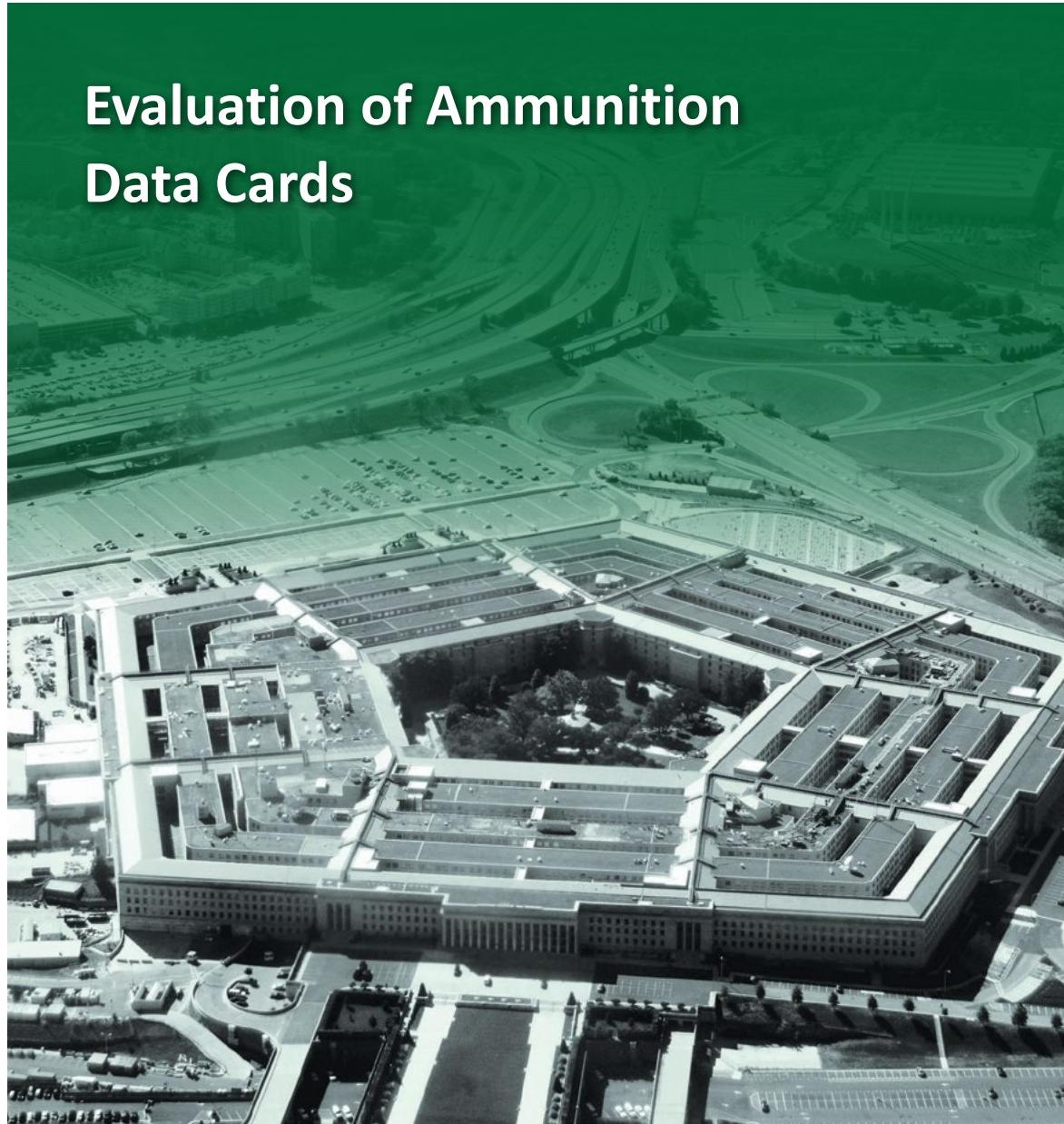


INSPECTOR GENERAL

U.S. Department of Defense

APRIL 29, 2016

Evaluation of Ammunition Data Cards



INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

[REDACTED]

INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

Mission

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Vision

Our vision is to be a model oversight organization in the Federal Government by leading change, speaking truth, and promoting excellence—a diverse organization, working together as one professional team, recognized as leaders in our field.



For more information about whistleblower protection, please see the inside back cover.

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Results in Brief

Evaluation of Ammunition Data Cards

April 29, 2016

Objective

We initiated the evaluation of ammunition data cards (ADCs) in response to a House Armed Services Committee staff request. The objective of this evaluation was to determine whether ADCs were processed in accordance with Military Standard (MIL-STD)-1168, "Ammunition Lot Numbering and Ammunition Data Card," and applicable contractual requirements to ensure material traceability and verification of ammunition component information. An ADC is a permanent record that contains ammunition information, including lot number, manufacturer, quantity, date manufactured, drawing specification number, and drawing revision.

Finding

We determined that ADC data accuracy and completeness were systemically deficient. Of 189 ADCs reviewed, 181 ADCs had errors, with a total of 1,307 errors identified within ADCs. This is due to the lack of standardized processes for the ADC Program and inadequate review of ADCs by the onsite Government representatives and Joint Munitions Command (JMC). ADC errors affect munition traceability and result in a degraded ability to isolate defective components and materials, recall fielded and stored ammunition, and perform effective failure investigations.

Recommendations

We recommend that JMC:

1. Document ADC creation and verification procedures to ensure that standardization of ADC process is in accordance with MIL-STD-1168, the Ammunition-Data Repository Program User Manual, and contracts.
 - a. Ensure onsite Government representatives develop methods to verify that ADCs are accurate, complete, and contractually compliant.
 - b. Create instructions for ADC review that include the specific information fields to verify on ADCs and what material pedigree data that ADC information is verified against.
2. Document periodic reviews of ADCs for evidence of review as required by JMC QA-OP-PQM-12, "Operating Procedure."
3. Ensure that MIL-STD-1168 B and C requirements are incorporated into current open and future contracts, the Quality Assurance Letter of Instruction, and Letters of Delegation.
4. Train JMC onsite Government representatives to improve oversight of ADC approval process. Train JMC onsite Government representatives on the MIL-STD-1168C requirements.

We recommend that Defense Contract Management Agency (DCMA):

5. Ensure that MIL-STD-1168 B and C requirements are incorporated in the Quality Assurance Surveillance Plan for the ammunition data card process.
6. For manufacturing facilities with DCMA onsite Government representatives, develop methods to verify that the data for all components on ADCs comply with MIL-STD-1168, the Ammunition-Data Repository Program User Manual, and contractual requirements.
7. Train DCMA onsite Government representatives to improve oversight of the ADC approval process. Train DCMA onsite Government representatives on MIL-STD-1168C requirements.



Results in Brief

Evaluation of Ammunition Data Cards

Management Comments and Our Response

JMC agreed with three recommendations and partially agreed with one recommendation. JMC disagreed with our recommendation concerning the use of Certificates of Conformance (CoCs) in ADC process. Comments from JMC indicated that requiring CoCs is not economically feasible and does not sufficiently support the intent to improve product traceability in ADCs.

We agreed and revised Recommendation 1.b to allow for an alternative solution. Additionally, JMC has implemented several improvement initiatives in accordance with the revised MIL-STD-1168C. However, comments from JMC did not explain how it would implement the recommendations. Therefore, we request that JMC provide additional comments in response to this report by May 30, 2016.

Management Comments (cont'd)

DCMA agreed with three recommendations. However, comments from DCMA did not explain how it would implement the recommendations. Therefore, we request that DCMA provide additional comments in response to this report by May 30, 2016. Please see the Recommendations Table on the following page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
United States Army Joint Munitions Command	1.a, 1.b, 2, 3, 4	
Defense Contract Management Agency	5, 6, 7	

Please provide Management Comments by May 30, 2016.



**INSPECTOR GENERAL
DEPARTMENT OF DEFENSE**
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

April 29, 2016

MEMORANDUM FOR COMMANDER, JOINT MUNITIONS COMMAND DIRECTOR,
DEFENSE CONTRACT MANAGEMENT AGENCY

SUBJECT: Evaluation of Ammunition Data Cards (Report No. DODIG-2016-084)

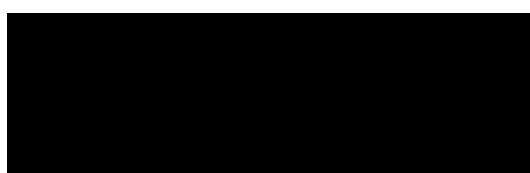
We are providing this report for review and comment. We evaluated a sample of ammunition data cards (ADCs) to determine whether they were processed in accordance with MIL-STD-1168 and applicable contractual requirements to ensure material traceability and verification of component information.

We conducted this evaluation in accordance with the Council of the Inspectors General on Integrity and Efficiency, "Quality Standards for Inspection and Evaluation." ADC data accuracy and completeness were systemically deficient which affect munition traceability. Of the 189 ADCs reviewed, 181 ADCs had errors, with a total of 1,307 errors identified within ADCs. This is due to the lack of standardized processes for ADC Program and inadequate review of ADCs by the onsite Government representatives and the Joint Munitions Command.

We considered management comments on a draft of this report when preparing the report. DoD Instruction 7650.03 requires that recommendations be resolved promptly. Comments from the Joint Munitions Command and Defense Contract Management Agency did not fully address the specifics of the recommendation. Based on management comments, we revised Recommendation 1.b to allow for an alternative solution. Therefore, we request further comments by May 30, 2016.

Please send a PDF file containing your comments to [REDACTED]. Copies of your comments must have the actual signature of the authorizing official for your organization. We cannot accept the /Signed/ symbol in place of the actual signature. If you arrange to send classified comments electronically, you must send them over the SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the courtesies extended to the staff. Please direct questions to [REDACTED]



Deputy Inspector General
Policy and Oversight

CC:

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Army Inspector General
Naval Inspector General
Auditor General, Department of Army

Contents

Introduction

Objective	1
Background	1
Ammunition Data Card	1
Worldwide Ammunition-Data Repository Program	3
Military Standard (MIL-STD-1168)	3
Joint Munitions Command	3
Joint Munitions Command and Defense Contract Management	
Agency Government Representatives	4
Sample Ammunition Data Card	4
Certificate of Conformance	5

Finding. Ammunition Data Card Data Accuracy and Completeness were Systemically Deficient

Discussion	6
The Use of Certificate of Conformance to Verify Ammunition Data Card Accuracy	7
Prevalent Error Types	9
Lack of Oversight by Joint Munitions Command	11
Lack of Standardized Processes for Ammunition Data Card Program	11
Ammunition Data Card Contract Review	12
Verifying and Approving Ammunition Data Cards	12
Inadequate Review of Ammunition Data Cards by the Onsite Government Representatives	13
Conclusion	14
Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments on the Finding and Our Response	14
Recommendations; Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments; and Our Response	15
Revised Recommendation	15

Contents (cont'd)

Appendices

Appendix A. Scope and Methodology	18
Statistical Sampling Process	19
Use of Computer-Processed Data	21
Use of Technical Assistance	21
Prior Coverage	21
Appendix B. Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments on the Finding and Our Response	22
Commanding General, Joint Munitions Command Comments on the Finding and Our Response	22
Deputy Chief Operations Officer, Defense Contract Management Agency Comments on the Finding and Our Response	23

Management Comments

Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments	28
Commanding General, Joint Munitions Command	28
Deputy Chief Operations Officer, Defense Contract Management Agency	31

Acronyms and Abbreviations 37

Introduction

Objective

The objective of this evaluation was to determine whether ammunition data cards (ADCs) were processed in accordance with MIL-STD-1168 and applicable contractual requirements to ensure material traceability and verification of component information. See the Appendix A for details on the scope and methodology.

Background

We announced the evaluation of the ADCs in June 2015 in response to a House Armed Services Committee staff request concerning material traceability of ADCs and Government oversight. To address this request, we initiated this project to evaluate the traceability, accuracy, and completeness of ADCs.

This report focuses on traceability, especially the materials and parts data on the ADCs. Traceability, as defined in International Organization for Standardization (ISO) 9000, Paragraph 3.6.13, "Traceability," is the "ability to trace the history, application or location of an object." ISO 9000 states:

When considering a product or service, traceability can relate to – the origin of materials and parts, the processing history, and the distribution and location of the product or service after delivery.

Ammunition Data Card

An ADC is a Government record used to permanently record essential data pertaining to the initial history of a lot of ammunition and explosive material. The data card is filled out by the munition manufacturers and is used to provide traceability of explosive items and contains ammunition information such as lot number,¹ manufacturer, quantity, date manufactured, components, drawing specification number, and drawing revision. See Figure 1 for a mock ADC. ADCs are also used during engineering investigations to isolate defective components and materials, recall fielded and stored ammunition, and perform effective failure investigations. The Government provides the munition manufacturers the requirements for major components, subcomponents, nonenergetic materials, and all energetic² materials to be listed on an ADC.

¹ Lot Number is a code number systemically assigned to each ammunition lot at the time of manufacture, assembly, or modification that uniquely identifies the particular ammunition lot. A Lot is defined as quantity of a thing used as a unit of inventory, output, sale, sampling, or transportation. Items in a lot are produced under essentially the same conditions and are intended to have uniform quality and characteristics within specified limits.

² Energetic materials are a class of material with a high amount of stored chemical energy that can be released in an explosive detonation.

Worldwide Ammunition-Data Repository Program

The Worldwide Ammunition-Data Repository Program (WARP) is a database application used to create, store, and retrieve ADCs. The Joint Munitions Command (JMC) is the WARP administrator, but the physical database resides at the Army Materiel Command, Redstone Arsenal, Huntsville, Alabama, as part of the Munitions History Program (MHP). WARP provides basic and specific search routine capabilities to organizations that need to retrieve ADCs for their particular mission and functions.

Military Standard (MIL-STD-1168)

MIL-STD-1168B, "Ammunition Lot Numbering and Ammunition Data Card," June 10, 1998, established and described the lot numbering system and ADC preparation to identify items of ammunition and explosive materiel during all phases of their life cycle. MIL-STD-1168B stated that the purpose of creating ADCs is "to provide a means for properly identifying materiel when withdrawal of defective, deteriorated, hazardous or obsolete ammunition and explosive materiel from service is required."

In March 2014, MIL-STD-1168B was superseded by MIL-STD-1168C in an effort to improve ADC requirements. For example, MIL-STD-1168C provides more detailed descriptions and examples of requirements and includes references to the new WARP-based ADC Program. In addition, MIL-STD-1168C changes and expands the requirements for ADC applicability to contain all major components, unless otherwise specified in the contract, specification, or drawing. It updates lot numbering schemes with an additional suffix to provide traceability for movement of fielded ammunition lots and provides updates for worldwide availability and web-based submission, verification, and maintenance of ADC information. In addition, some roles and responsibilities, such as ensuring that contractors are knowledgeable in the use and application of codes within the lot numbers, are more clearly delineated.

All the products we reviewed were delivered when MIL-STD-1168B was still in effect. Therefore, only MIL-STD-1168B applied to ADCs that were reviewed for this evaluation. During the time of the evaluation, MIL-STD-1168C was not referenced in any current ammunition production contracts.

Joint Munitions Command

JMC, headquartered at Rock Island Arsenal, Illinois, is part of the Army Material Command. JMC's mission is to provide the Services with ready, reliable, and lethal munitions at the right time and place, in a cost-effective manner, to enable successful military operations. Munitions are produced by contractor-owned,

contractor-operated (COCO); Government-owned, contractor-operated (GOCO); and Government-owned, Government-operated (GOGO) facilities. JMC is responsible for producing, distributing, storing, and demilitarizing ammunition rounds through its 14 depot locations throughout the United States. JMC is also responsible for the maintenance, accuracy, and completeness of ADCs and their storage, using the web-based WARP application. JMC Production Quality Management Division manages WARP and ADC approval process.

Joint Munitions Command and Defense Contract Management Agency Government Representatives

To meet the requirements of MIL-STD-1168, JMC has assigned onsite Government representatives at each manufacturing facility. Their roles specific to the ADC process are to review and approve ADCs for accuracy and completeness in accordance with contract requirements, Quality Assurance Letter of Instruction (QALI)/Quality Assurance Surveillance Plan (QASP),³ and MIL-STD-1168. They are also responsible for appropriately disposing of ADCs. The onsite Government representative is usually the Defense Contract Management Agency (DCMA) Quality Assurance Representative (QAR) at COCO facilities or JMC QAR at Government-owned facilities.

Sample Ammunition Data Card

MIL-STD-1168 requires that a Sample ADC⁴ must be submitted by the munition manufacturer to the Government when a manufacturer produces an item requiring an ADC for the first time, before first article production,⁵ after a 1-year production lapse, or as defined in the contract. The Sample ADC must be approved by the Government before submission of a permanent ADC by the manufacturer. All subsequent ADCs produced must have an approved Sample ADC unless it is during a first article production,⁶ after a 1-year production lapse, or as defined in the contract, at which time a new sample card must be submitted by the munition manufacturer for review and approval by the Government.

³ See the Inadequate Review of ADCs by the onsite Government Representatives section of this report for more details.

⁴ A Sample ADC is a term used in the approval process of the first ADC prepared before the first shipment on every contract.

⁵ First article is a first set of a series of products produced, which goes through the detailed verification of production results versus product design before ongoing manufacturing begins.

⁶ First article is a first set of a series of products produced which goes through the detailed verification of production results versus product design before ongoing manufacturing begins.

Certificate of Conformance

A Certificate of Conformance (CoC) is a document provided by a supplier or manufacturer attesting to item's conformance to stated requirements. The primary purpose of CoCs is to assist in verifying or validating that products conform to purchase requirements, as required by Federal Acquisition Regulation (FAR) Paragraph 46.504, "Certificate of Conformance."

JMC does not require that CoCs data be used to populate ADCs, and not all ammunition manufacturers necessarily use CoCs for this purpose. However, all three ammunition manufacturers inspected during this evaluation stated that they used CoCs to populate ADC component data as objective evidence of conformance. For this reason, CoCs were also used in our evaluation of ADCs to determine ADC accuracy.

Finding

Ammunition Data Card Data Accuracy and Completeness were Systemically Deficient

Of the 189 ADCs we reviewed, 181 ADCs had incorrect and incomplete component data. Specifically, we identified a total of 1,307 errors on the 189 ADCs reviewed. These conditions occurred because:

- JMC did not effectively manage and oversee the ADC Program. Specifically, JMC and DCMA onsite Government representatives at the manufacturing facilities were accepting inaccurate and incomplete ADCs from the manufacturer without verifying the data as required by MIL-STD-1168B.
- JMC lacked standardized processes and procedures for onsite Government representatives to review and approve ADCs.

The inaccuracy and incompleteness of ADCs affect munition traceability and result in a degraded ability to isolate defective components and materials, recall fielded and stored ammunition, and perform effective failure investigations.

Discussion

We evaluated ADC accuracy and completeness in relation to MIL-STD-1168B, JMC WARP User Manual Version 3.16, and the contract. We selected three ammunition plants that were producing munitions for JMC contracts: McAlester Army Ammunitions Plant (AAP), McAlester, Oklahoma; Iowa AAP, Middletown, Iowa; and New River Energetics (NRE), Radford, Virginia.⁷ We determined that 189 ADCs would be an adequate sample size for this evaluation,⁸ and we reviewed them for traceability of the ammunition lots to components and subcomponents that make up conventional ammunition/propellants. Of the 189 ADCs reviewed, 181 (96 percent) had errors, with a total of 1,307 errors identified within ADCs. The errors were categorized into 15 different types. See Figures 2 and 3 for the number and types of errors. Figure 2 shows the errors in assembly level information, and Figure 3 shows the errors in component information.

⁷ NRE is a subcontractor of Orbital ATK located in Plymouth, Minnesota, and is solely responsible for loading, assembling, and packing medium caliber ammunition. NRE does not maintain CoCs from the various Orbital ATK suppliers because it does not have direct contractual relationships with those suppliers. Orbital ATK maintains all CoCs from its subcontractors.

⁸ The DoD OIG designed an attribute stratified sampling plan to review the ADCs. The population consisted of nine strata. We selected the random sample without replacement from each stratum using the random function tool in EXCEL.

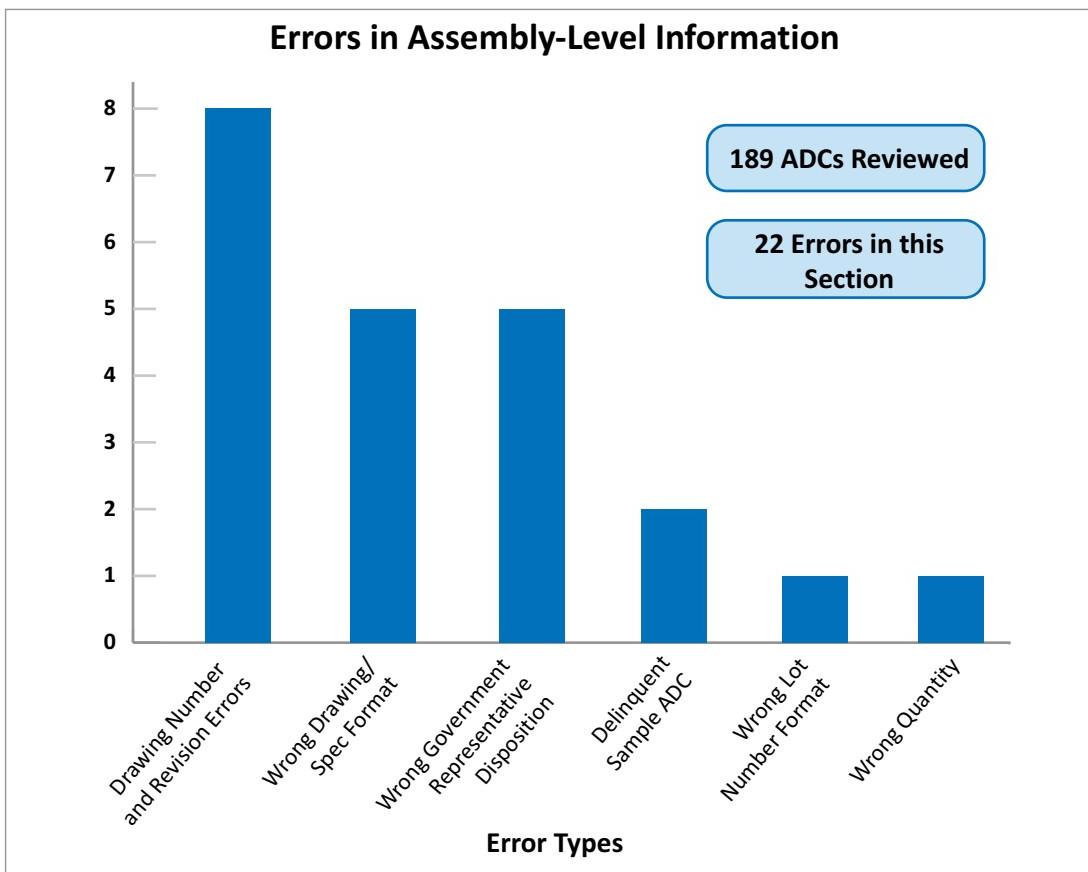
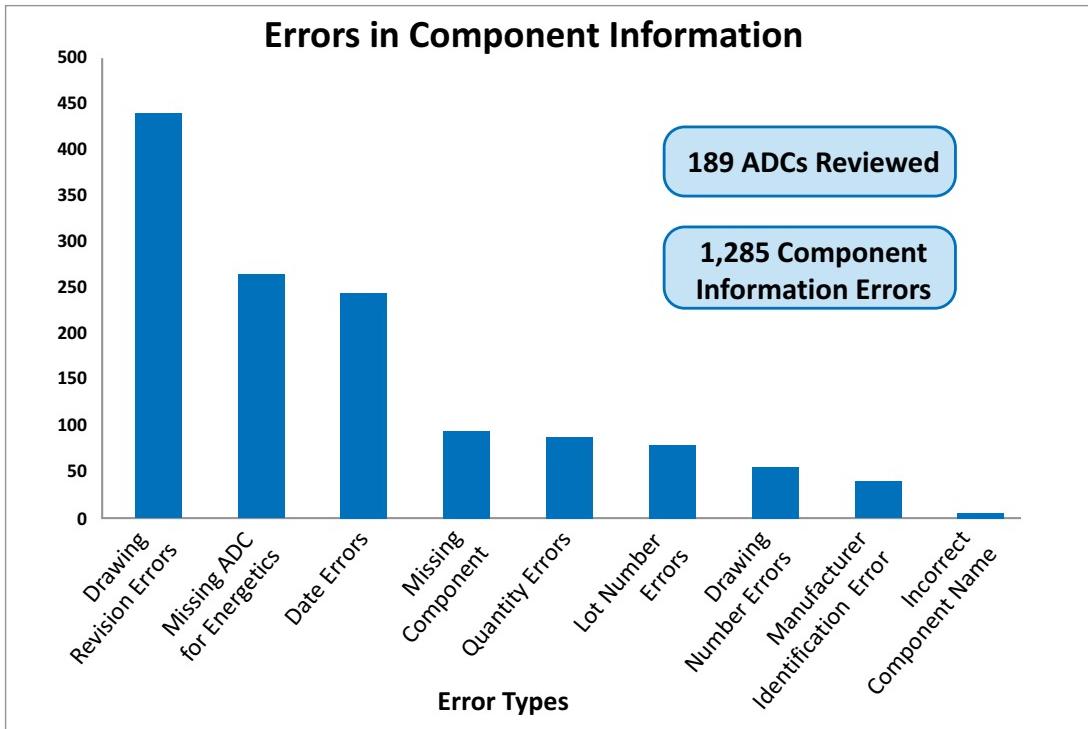
The Use of Certificate of Conformance to Verify Ammunition Data Card Accuracy

As discussed in the Background section, a CoC is a document provided by a supplier or manufacturer attesting to an item's conformance to stated requirements. The primary purpose of CoCs is to assist in verifying or validating that products conform to purchase requirements, as required by FAR Paragraph 46.504, "Certificate of Conformance."

JMC did not require that CoC data be used to populate ADCs, and not all ammunition manufacturers use CoCs for this purpose. However, all three ammunition manufacturers inspected during this evaluation stated that they used CoCs to populate ADC component data as objective evidence of conformance. For this reason, CoCs were also used in our evaluation of ADCs to determine ADC accuracy.

Of the 189 ADCs we evaluated, 147 ADCs had data that did not match the corresponding CoCs. Within these 147 ADCs, there were 760 instances where CoCs were either not available or did not contain complete information to verify ADC component data. Although the use of CoCs to populate ADCs is not a contractual requirement, CoC accuracy and availability could be critical in producing an accurate ADC.

Furthermore, ADC accuracy and completeness is critical when records, such as CoCs, are not available to determine the conformance of ammunition components to technical requirements. Therefore, we recommend that JMC create instructions for ADC review that includes what information fields to verify on ADCs and what material pedigree data that ADC information is verified against.

Figure 2. Total Errors in Assembly-Level Information*Figure 3. Total Errors in Components Information*

As noted previously, 96 percent of ADCs reviewed had errors. The high error rate indicates that JMC did not have effective management and oversight of the ADC Program. Additionally, JMC did not have documented procedures for identifying and managing components required to be listed on ADCs. For example, JMC did not have procedures for the munition technical Integrated Product Teams (IPTs) to identify critical items that are required to be on ADCs or have their own ADCs.

Furthermore, the onsite Government representatives at the manufacturing facilities did not have written standards and procedures to verify the accuracy and completeness of ADCs to MIL-STD-1168B. In many cases, these onsite Government representatives were verifying ADCs based on how they interpreted WARP and MIL-STD-1168. Although ISO 9001 compliance was not part of the objective of this evaluation, as an ISO 9001-certified organization,⁹ JMC should have its operating processes documented in order to meet ISO requirements and ensure process consistency.

Evaluations of the ADC approval processes at McAlester AAP, Iowa AAP, and NRE revealed that the onsite Government representatives at the manufacturing facilities were not performing due diligence to ensure the accuracy and completeness of ADCs. The onsite Government representatives for each of these sites were employed by different agencies and used ad hoc processes for the review and approval of ADCs. The onsite Government representatives were accepting inaccurate and incomplete ADCs from the manufacturer without verifying the data on ADC as required by the contract, QALI/QASP, and MIL-STD-1168. ADC errors affect munition traceability and result in a degraded ability to isolate defective components and materials, recall fielded and stored ammunition, and perform effective failure investigations.

Prevalent Error Types

The most prevalent error types, as seen in Figure 3, are drawing revision errors, missing ADCs for energetics, date errors, and missing components. WARP User Manual provides instructions on how to input data into ADCs and its use is required by the contracts. Paragraph 2.1.5.2. of WARP User Manual states:

Enter the Drawing Number and applied Engineering Change Proposal (ECP)/Notice of Revision (NOR), if any. Enter the Specification Number and amendments to specifications if a specification applies instead of a Drawing Number. Enter the Drawing Number or Specification Revision.

⁹ ISO 9000 standards are designed to improve operating procedures and reduce cost. ISO certified means the organization operates using the ISO guideline.

Drawing Revision Errors

Despite the instructions in the Manual, the most common error found during our evaluation was drawing revision errors. There were also instances when specifications were listed instead of the applicable drawing, which is discrepant with WARP User Manual. When an incorrect drawing revision is provided and a failure investigation is warranted, then the incorrect technical data will be used during the investigation. As a result, the investigation would include invalid conclusions and munitions traceability.

Missing Ammunition Data Cards for Energetics

Missing ADCs for energetics results from energetic components that are missing a required ADC and may not have a MIL-STD-1168-compliant lot number. MIL-STD-1168B describes the usage of lot numbers as “ammunition end items and their components including small arms, chemicals, grenades, mines, pyrotechnics, etc.” Paragraph 3.18, “Lotting Concepts,” directs systematic ammunition lot numbering in order to assure accurate identification and control of the lot and its major components during their entire life cycle. Additionally, MIL-STD-1168B states that ADC applicability will be determined based on whether lot numbers are applicable. Our evaluation identified energetic components that did not have ADCs or compliant lot numbers. When energetic components do not have ADCs or compliant lot numbers and a failure investigation is warranted, then there would be no avenue to trace which materials are affected; some of materials may need to be recalled or isolated.

Date Errors

Date errors resulted from data entry that did not match source data or did not meet the requirements of WARP User Manual paragraph 2.1.5.5., which states “[i]nsert the month and year, MMYY, during which each Component was manufactured.” Inconsistency in data entry resulted in some dates listed in the YYYY format, which results in loss of information about the month of manufacture and which impact component traceability. Another date-related error was the listing of component dates that did not match the component’s actual manufacturing date. Errors ranged from a month to more than a year. There were also many instances of the component date being listed as “Unknown.” When ADCs contain invalid or incomplete dates and a failure investigation is warranted, then there would be confusion on which lot of the material is affected; some of materials may need to be recalled or isolated.

Lack of Oversight by Joint Munitions Command

JMC is responsible to ensure that ADCs are accurate and complete. According to Operating Procedure, QA-OP-PQM-12, part of this responsibility is to periodically review ADCs to ensure that they are accurate and complete. However, we found no evidence that these reviews were being performed.

Another responsibility of JMC is to receive and approve Sample ADCs before completion of production ammunition lots. However, JMC was not effectively reviewing Sample ADCs to ensure that all ADC requirements were met. Some Sample ADCs did not contain all components required by the contracts. Because the Sample ADC was used as a template for the production of ADCs, subsequent ADCs did not have all the required component data.

JMC periodically reviewed ADCs in the WARP database to check for errors. JMC also periodically reviewed a sample of ADCs in the contract to verify that the onsite Government representatives adequately reviewed and approved ADCs. However, the process and results of these periodic reviews were not consistent and documented, which resulted in systemic errors on ADCs. Furthermore, there was no documented record, such as an audit report, that provided an accounting of the errors that required improvement in order to refine the process and mitigate the risk of repeated errors. Procedures and records are necessary in a quality process.

Finally, JMC did not provide sufficient oversight and direction to onsite Government representatives at the manufacturing facilities to ensure that ADCs were reviewed and verified to meet requirements. Evidenced by the 1,307 errors found in the evaluation of ADCs.

Lack of Standardized Processes for Ammunition Data Card Program

JMC munition technical IPT determines which components are to be listed on ADCs. However, JMC could not provide documentation to describe the process or guidance and ensure consistency among technical IPTs. JMC stated that the contract includes the technical data package that provides a source for determining applicable components. A discussion with JMC representatives regarding their technical data package and the component determination process disclosed that there was no consistent direction or methodology to explain the differences between components listed in the end-item drawing and components listed in ADCs.

During the evaluation, we found no evidence that showed that the actual ADC process complied with the requirements in MIL-STD-1168B dated June 10, 1998. MIL-STD-1168B, paragraph 4.3.1., contains requirements for the applicability of ADCs. It states that ammunition materiel and serialized items require an ADC if stated in the specification. If there is no requirement for an ADC in the specification, but it is determined by the Government to be necessary, the specification should be updated to include an ADC requirement.

Ammunition Data Card Contract Review

As part of our evaluation, we inspected a sample of nine open contracts. The contracts we reviewed specifically state ADCs shall be prepared and meet the format requirements of MIL-STD-1168 and WARP. Additionally, the contracts direct the manufacturers to prepare an ADC for each lot of item(s) being produced, regardless of whether or not those lots are accepted or rejected by the Government. Furthermore, the contract also states that unless otherwise authorized by the Procuring Contracting Officer (PCO), the manufacturer shall include, in the components sections on ADC representing the munition, all assemblies, subassemblies, components, explosives, and propellants. However, four of nine contracts did not include requirements for ADCs to contain specific ammunition lot components or evidence of PCO waiver approval. As a result, ADCs did not consistently include component items that make up the ammunition, and those component items did not always have their own required ADCs.

Verifying and Approving Ammunition Data Cards

JMC required that a Sample ADC be submitted for approval before production ammunition lots were produced and accepted. JMC is expected to ensure that the Sample ADCs met MIL-STD-1168 and contractual requirements for content and accuracy. However, JMC did not verify that all contractually required components were listed on the Sample ADC before approving them.

JMC relied on the onsite Government representative to ensure that the manufacturer entered the correct information into ADCs. However, JMC did not provide adequate oversight of onsite Government representatives' review and approval as evidenced by the 1,307 errors identified on ADC during this evaluation. JMC provided the onsite Government representatives with MIL-STD-1168 and WARP User Manual as instructions but had not provided training to the onsite Government representatives since 2011. Additionally, MIL-STD-1168B was superseded by MIL-STD-1168C dated March 11, 2014; the changes to MIL-STD-1168B were significant. Again, JMC did not provide training to the

manufacturers or onsite Government representatives on those changes. Effective training and communication between JMC and onsite Government representatives is necessary to ensure correct and consistent implementation of the ADC process.

Inadequate Review of Ammunition Data Cards by the Onsite Government Representatives

At McAlester AAP, the ADC process was documented in a JMC In-Plant Quality Evaluation (IQUE). However, IQUE did not provide adequate specificity for reviewing and approving ADCs. Based on our evaluation, the onsite Government representatives assumed that if there was an approved Sample ADC for the lot, that subsequent ADC data were accurate without actually verifying the data. For example, they did not compare CoCs and other pedigree data to ADC data during ADC review and approval process. Therefore, approved ADCs may include inaccurate and incomplete data that may be carried over to subsequent ADCs.

At Iowa AAP, JMC issued oversight requirements for onsite Government representatives through a Quality Assurance Letter of Instruction (QALI). Based on QALI, onsite Government representatives developed a Quality Assurance Surveillance Plan (QASP) that included ADC requirements. JMC QALI emphasizes the importance of ADCs but does not provide specificity on how to perform ADC review. QASP directs the onsite Government representative to review lot history files; however, it does not define the process for reviewing and verifying all the information on ADCs. Furthermore, we found no evidence that the onsite Government representatives were reviewing all ADCs information before their approval.

At Radford, VA, NRE the onsite DCMA Government representative stated that his role is described in JMC QALI and DCMA Letter of Delegation (LOD). JMC QALI directs the onsite Government representative to use WARP, WARP User Manual, and ADC requirements in the contract to review ADCs. DCMA LOD instructs the onsite Government representatives to "Sign off any ADCs as required." These documents do not provide specificity for the onsite Government representatives to perform ADC review and approval. Additionally, the onsite Government representatives did not have the necessary data to verify the accuracy of ADCs, as this data were located at another location. Furthermore, NRE contracts that we reviewed contained requirements for ADCs to include specific components and for those components to have their own ADCs. However, ADCs we reviewed for this contract did not always include the required component data.

Conclusion

Based on the number of errors found during our evaluation, it is evident that there was a systemic issue regarding ADC accuracy and completeness. Furthermore, JMC's lack of effective management and oversight of ADC Program resulted in inconsistent and inaccurate ADC data. JMC did not have documented procedures for determining which munition components should be included on an ADC. The ADC review and approval process used by the onsite Government representatives varied significantly among the three sites. The onsite Government representatives from all three sites were not using CoCs and other pedigree data to verify data accuracy during the ADC review and approval process. Therefore, approved ADCs included incomplete and inaccurate data that may be carried over to subsequent ADCs. Without standardized and documented processes, the ADC review and approval will continue to be inadequate and ADCs will continue to contain errors that affect munition component traceability. Deficient traceability directly impacts the Government's ability to perform engineering investigations, isolate defective components and materials, recall fielded and stored ammunition, and perform effective failure investigations.

Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments on the Finding and Our Response

On behalf of Commander, Army Materiel Command, the Commanding General, JMC provided comments to finding and Recommendations. The Deputy Chief Operations Officer, DCMA also provided comments to finding and Recommendations. Summaries of JMC and DCMA comments on the finding and our response are in Appendix B.

Recommendations; Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments; and Our Response

Revised Recommendation

As a result of Commanding General, JMC comments, we revised Recommendation 1.b to allow for an alternative to requiring the use of CoCs in ADC process.

We recommend that Joint Munitions Command:

- 1. Document ammunition data card creation and verification procedures to ensure standardization of the ammunition data card process is in accordance with MIL-STD-1168, the Ammunition-Data Repository Program User Manual, and contracts.**
 - a. Ensure onsite Government representatives develop methods to verify that the ammunition data cards are accurate, complete, and contractually compliant.**

Commanding General, Joint Munitions Command Comments



Our Response



- b. Create instructions for ammunition data card review that include the specific information fields to verify on the ammunition data cards and what material pedigree data that ammunition data card information is verified against.**

Commanding General, Joint Munitions Command Comments



[REDACTED]

Our Response

[REDACTED]

[REDACTED]

2. Document periodic reviews of ammunition data cards for evidence of review as required by Joint Munitions Command's QA-OP-PQM-12 Operating Procedure.
3. Ensure that MIL-STD-1168 B and C requirements are incorporated into current open and future contracts, the Quality Assurance Letter of Instruction, and Letters of Delegation.
4. Train Joint Munitions Command onsite Government representatives to improve oversight of the ammunition data card approval process. Train Joint Munitions Command onsite Government representatives on MIL-STD-1168C requirements.

Commanding General, Joint Munitions Command Comments

[REDACTED]

[REDACTED]

Our Response

[REDACTED]

[REDACTED]

We recommend that Defense Contract Management Agency:

5. Ensure that MIL-STD-1168 B and C requirements are incorporated in the Quality Assurance Surveillance Plan for the ammunition data card process.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

DCMA agreed with our recommendation and provided comments. Comments from DCMA indicated that there are no current contracts administered by DCMA that incorporate Mil-STD-1168 Rev C requirements.

Our Response

We agreed that there are no current contracts administered by DCMA that incorporate Mil-STD-1168 Rev C requirements. However, comments from DCMA did not address the specifics of the recommendation for the future contracts that will incorporate Mil-STD-1168 Rev C requirements. Therefore, we request that DCMA provide additional comments in response to the final report detailing specific information about corrective actions.

6. For manufacturing facilities with Defense Contract Management Agency onsite Government representatives, develop methods to verify that the data for all components on the ammunition data cards comply with MIL-STD-1168, the Ammunition-Data Repository Program User Manual, and contractual requirements.
7. Train DCMA onsite Government representatives to improve oversight of the ammunition data card approval process. Train DCMA onsite Government representatives on MIL-STD-1168C requirements.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

DCMA agreed with the Recommendations 6 and 7.

Our Response

Comments from DCMA did not address the specifics of the recommendations. Therefore, we request that DCMA provide additional comments in response to the final report detailing specific information about corrective actions.

Appendix A

Scope and Methodology

We conducted this evaluation in accordance with the Council of the Inspectors General on Integrity and Efficiency “Quality Standards for Inspection and Evaluation.” Those standards require that we plan and perform the evaluation to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our evaluation objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our evaluation objectives.

This evaluation was limited to current active munitions contracts issued by JMC. Furthermore, the evaluation was limited to one GOGO, one GOCO, and one COCO facility to limit the overall sample size of ADCs while still providing an overall picture of the spectrum of manufacturing facilities.

We met with JMC personnel to understand its roles and responsibilities as well as the overall ADC process. We also reviewed JMC processes, internal documents, and internal audits, and interviewed responsible staff associated with ADC process.

We selected a total of nine contracts from three facilities covering items such as bombs, mortar rounds, and large caliber ammunition, which resulted in an overall population size of 900 ADCs. Using OIG statistical analysis¹⁰, we determined that 189 random ADCs would be an adequate sample size for review and verification. We reviewed each ADC to verify items listed matched contract requirements, all blocks were filled out correctly, manufactures and manufacturing dates were correct, and there was traceability of subassemblies and energetic compositions or propellants to their constituent parts. Once this was completed and errors recorded, we traveled to each manufacturing facility to verify material certifications for each of the energetic materials.

At each facility, we evaluated certification and records keeping of data associated with ADCs. We interviewed onsite Government representatives and reviewed the process and procedures to approve each ADC. We also reviewed ADC errors with the onsite Government representative to determine how those errors were made.

¹⁰ QMD, in consultation with the TAD team, designed an attribute stratified sampling plan to review the ADCs. The population consisted of nine strata. Based on the sample size given in the following table, the TAD engineers selected the random sample without replacement from each stratum using the random function tool in EXCEL.

Finally, we analyzed the results of ADC errors and onsite Government representative responses to determine where there were breakdowns in the process. We also analyzed the results to identify overarching trends. We used the data to determine the overall health and adequacy of the ADC process.

Statistical Sampling Process

We consulted with DoD OIG statisticians from the Quantitative Methods Division (QMD) and selected nine contracts from three ammunition Plants: McAlester AAP, McAlester, Oklahoma; Iowa AAP, Middletown, Iowa; and NRE, Radford, Virginia for evaluation. From those nine contracts, we selected a number of ADCs randomly based on our planned sample size. Table 1 shows the locations, the contracts, the number of available ADCs under each contract, and sample size chosen for each contract for our evaluation.

Table 1. The Stratum and Sample Sizes

Locations	Contracts	Number of Available ADCs	Sample Size
McAlester Army Ammunition Plant, McAlester, OK		260	30
		60	20
Iowa Army Ammunition Plant, Middletown, IA		441	50
		19	19
NRE AAP, Radford, VA		70	20
		14	14
		12	12
		19	19
		5	5
		900	189

We reviewed 189 ADCs for the traceability of ammunition lots to components and subcomponents that make up conventional ammunition/propellant. We identified numerous errors within ADCs and those errors are then classified into different types. Table 2 shows the number of errors under each type for each Lot in different contracts.

Table 2. Number of Errors for Each Error Type

Stratum (Contracts)	Stratum Size	Sample Size	ADC Front Data					Component Level										
			Delinquent Sample ADC	Drawing Number and Revision Errors	Wrong Drawing/Spec Format	Wrong Gov. Representative Disposition	Wrong Lot Number Format	Wrong Quantity	CoC Traceability	Date Errors	Drawing Number Errors	Drawing Revision Errors	Incorrect Component Name	Lot Number Errors	Manufacturer Identification Error	Missing Component	No ACD exist for Energetics	Quantity Errors
260	30	4	3	234	125	7	152	42	11	1	83							
60	20	2		107	59			16	4		8							
441	50	2	2 1	126	38	19	179	1	2	13		66	3					
19	19	5		104	1		14					52						
70	20	2		1	43	2	24	30	1	1	16	1						
14	14			95	4	2	1			52	39							
12	12			64			8			42	62	2						
19	19			22	17		49					24						
5	5			13			3	11										
Total Errors	900	189	2	8	5	5	1	1	760	244	52	436	1	72	28	95	268	89

From Table 2, QMD determined the measures (projection result) for each type of error category. For these measures, QMD used a 90 percent confidence interval and 7.5 percent precision for the projections. Table 3 gives the projection result for each error type.

Table 3. The Projection Results

Error Type	Lower Bound	Point Estimate	Upper Bound
CoC Traceability	3,286	3,858	4,430
Date Errors	1,327	1,607	1,886
Drawing Number Errors	205	314	424
Drawing Revision Errors	2,504	3,076	3,648
Lot Number Errors	297	444	591
Manufacturer Identification Error	136	222	308
Quantity Errors	478	751	1,024

Note: For each error type, the Lower Bound and Upper Bound are the minimum and maximum values of the confidence interval. The point estimate is characterized with a single number based on sample data and that represents a plausible value of 900 ADCs. For example, we project with a 90-percent confidence level that the total number of CoC traceability errors in 900 ADCs is between 3,286 and 4,430, with a point estimate of 3,858.

Use of Computer-Processed Data

We did not use computer-processed data to perform this evaluation.

Use of Technical Assistance

We consulted with DoD OIG statisticians from the Quantitative Methods Division to select contracts from three ammunition Plants: McAlester AAP, McAlester, Oklahoma; Iowa AAP, Middletown, Iowa; and NRE, Radford, Virginia for evaluation. From those contracts, we selected a number of ADCs randomly based on our planned sample size.

Prior Coverage

No prior coverage has been conducted on the ADC during the last 5 years.

Appendix B

Commanding General, Joint Munitions Command and Deputy Chief Operations Officer, Defense Contract Management Agency Comments on the Finding and Our Response

Commanding General, Joint Munitions Command Comments on the Finding and Our Response

[REDACTED]

Deputy Chief Operations Officer, Defense Contract Management Agency Comments on the Finding and Our Response

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

Throughout the report, an emphasis is made on the use of CoCs as a requirement in MIL-STD-1168B and as a contractual requirement. It is incorrect to suggest that CoC documents should be used to populate or determine ADC accuracy.

Our Response

The report does not state that CoCs are a requirement in MIL-STD-1168B or a contractual requirement. The report states that CoCs are not necessarily required, but each of the three sites visited for this evaluation used CoCs to populate ADCs.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

Page 12, footnote 7 states:

NRE is a subcontractor of Orbital ATK located in Plymouth, Minnesota, and is solely responsible for loading, assembling, and packing medium caliber ammunition. NRE does not maintain CoCs from the various Orbital ATK suppliers because it does not have direct contractual relationships with those suppliers. Orbital ATK maintains all CoCs from its subcontractors.

This is considered fully acceptable by DCMA and JMC. No other review of surveillance activities, process reviews, etc. for the verification of accuracy and completion of ADCs was conducted by the evaluation team.

Our Response

Though this is fully acceptable by DCMA and JMC, we do not agree with this process. DCMA QALI and LOD instructs the onsite Government representative at NRE to "Sign off any ADCs as required." Additionally, the NRE contracts that we reviewed contained requirements for ADCs to include specific components and for those components to have their own ADCs. However, ADCs we reviewed for this contract did not always include the required component data. Lastly, we walked through the entire ADC review process with DCMA at NRE and specifically asked whether there were any other ADC verification processes, but were not informed of any other surveillance activities or process reviews for the verification of the

accuracy and completion of ADCs. Therefore, the onsite Government representative do not have the documentation and process necessary to perform the review of ADCs.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

In the report, it is claimed CoC does not match the ADC. The report also states that all three of the manufacturers use CoC data to populate ADCs. It is incorrect to suggest that CoCs are used to populate ADCs.

Our Response

We observed that three sites used CoC data to populate the data on ADCs. At NRE, no other objective evidence of component compliance was provided to verify component ADC fields such as component drawing revision and date manufactured. Therefore, CoCs, which were included in the component material acceptance package, were used as a source of information for us to verify ADC data for this evaluation.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

The evaluation team visited NRE Corporation and appeared to be concerned that all levels of CoCs were not available at the subcontractor level. Component-level CoCs are not maintained at NRE (Subcontractor), they are maintained by the Prime Contractor, Orbital – ATK.

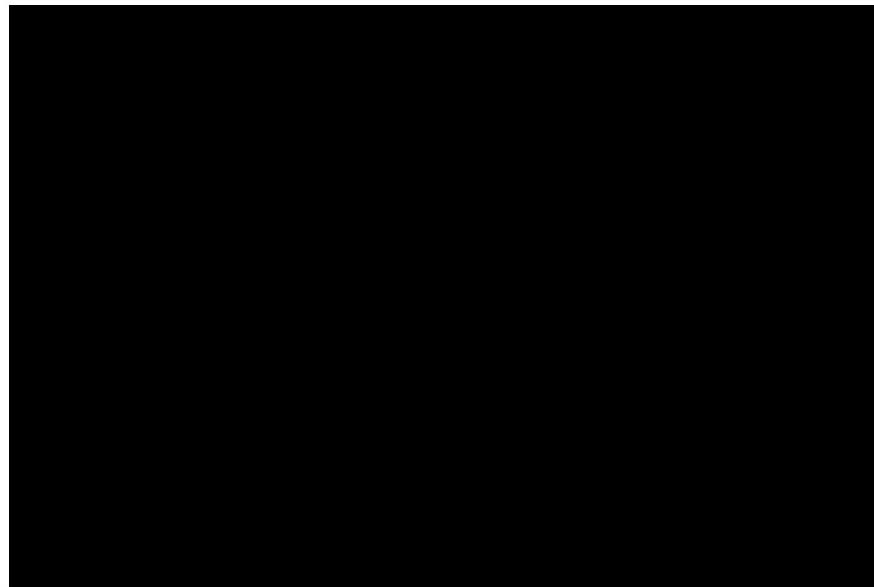
Our Response

We understand that NRE does not maintain all Component-level CoCs; however, without CoCs, DCMA has no source of objective evidence to verify the accuracy of the component data on ADCs.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

DCMA Government representatives review and assure that the accuracy of full-up rounds are completed in accordance with contract requirements. NRE is a load assembly and pack facility and produces the full-up round 30MM PGU 332 A/E. The end item component contract requirements in contract [REDACTED] are listed below:

- [REDACTED]
- c) Unless otherwise authorized by the Procuring Contracting Officer, the supplier shall include, in the components sections on the ADC representing the deliverable item, as a minimum; all assemblies, sub-assemblies, components, explosives, and propellants listed below for the item being procured, 30MM PGU-13D/B.

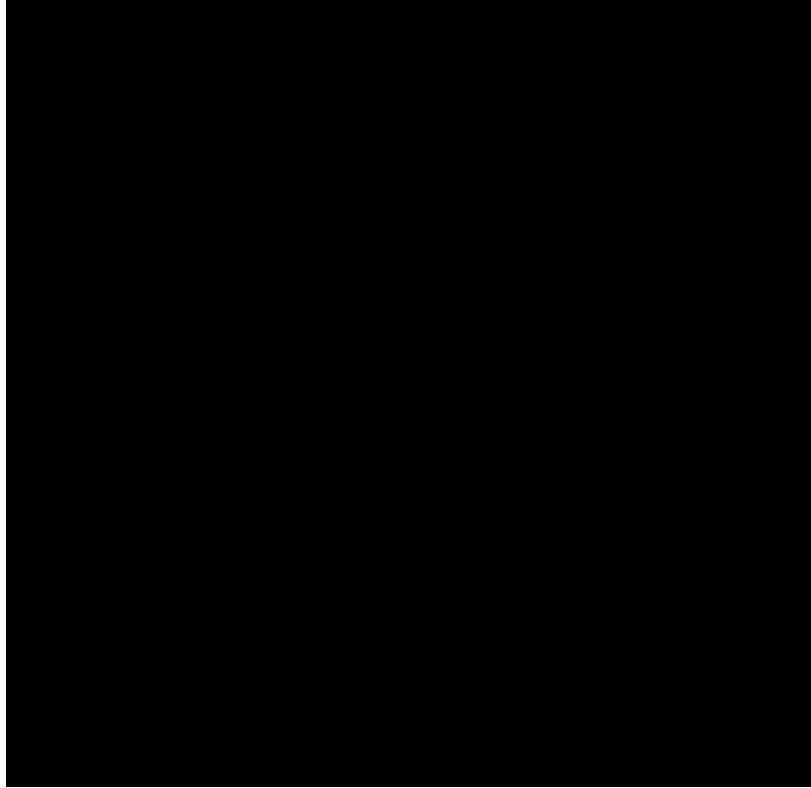


A review of a randomly selected ADCs from the contract [REDACTED], Lot Number [REDACTED], shows that all items were listed and verified as required by the contract.

Our Response

DCMA does not state what objective evidence was used to verify the accuracy of ADC information.

As an example, the excerpt directly following your referenced [REDACTED] (c) is as follows:

- (d) The component items identified below are from paragraph (c) above and will require their own component ADC in addition to being listed on the end item ADC. The component ADCs shall also comply with MIL-STD-1168 and WARP requirements.
- 

Contract [REDACTED], paragraph [REDACTED], states that the Fuze component is required to have its own sublevel ADC with specified components. However, there are no ADCs at NRE or in the WARP database for the Fuzes listed as components under this contract. Therefore, this contract ADC requirement has not been completed and contributes to ADC error count.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

Part of NRE onsite Government representative's role in ADC process is to verify that the contractor's Production Control develops manufacturing build cards from the contract. These build cards list the components, including revision and lot number, to be used in munition production. The build cards are also used to develop draft ADCs. During the production of the ammunition lot, the flow card follows the lot and is used to record the quantity of components used in that lot. Upon lot completion, ADC is updated with component quantities and is provided to the Government representative, who ensures ADC has all fields filled-in and then approves ADC.

Our Response

The flow card is the actual manufacturing record of the quantities of components in the buildup assembly. DCMA states that only the quantities are updated on ADC from the flow cards, but does not state how part number, revision, manufacturing date, and lot numbers are verified.

Deputy Chief Operations Officer, Defense Contract Management Agency Comments

For DCMA-administered contracts [REDACTED] no deficient entries were found in ADC Front Data section referring to the full-up round. Component-level entries will be reviewed and investigated; however, the NRE DCMA Government representative is solely responsible for the end item full-up round as outlined in contract requirements. DCMA will continue to review errors noted on Component level to determine their validity and to attempt to determine from which supplier they may possibly have been generated. These areas will be included in the soon to be developed standardized checklist.

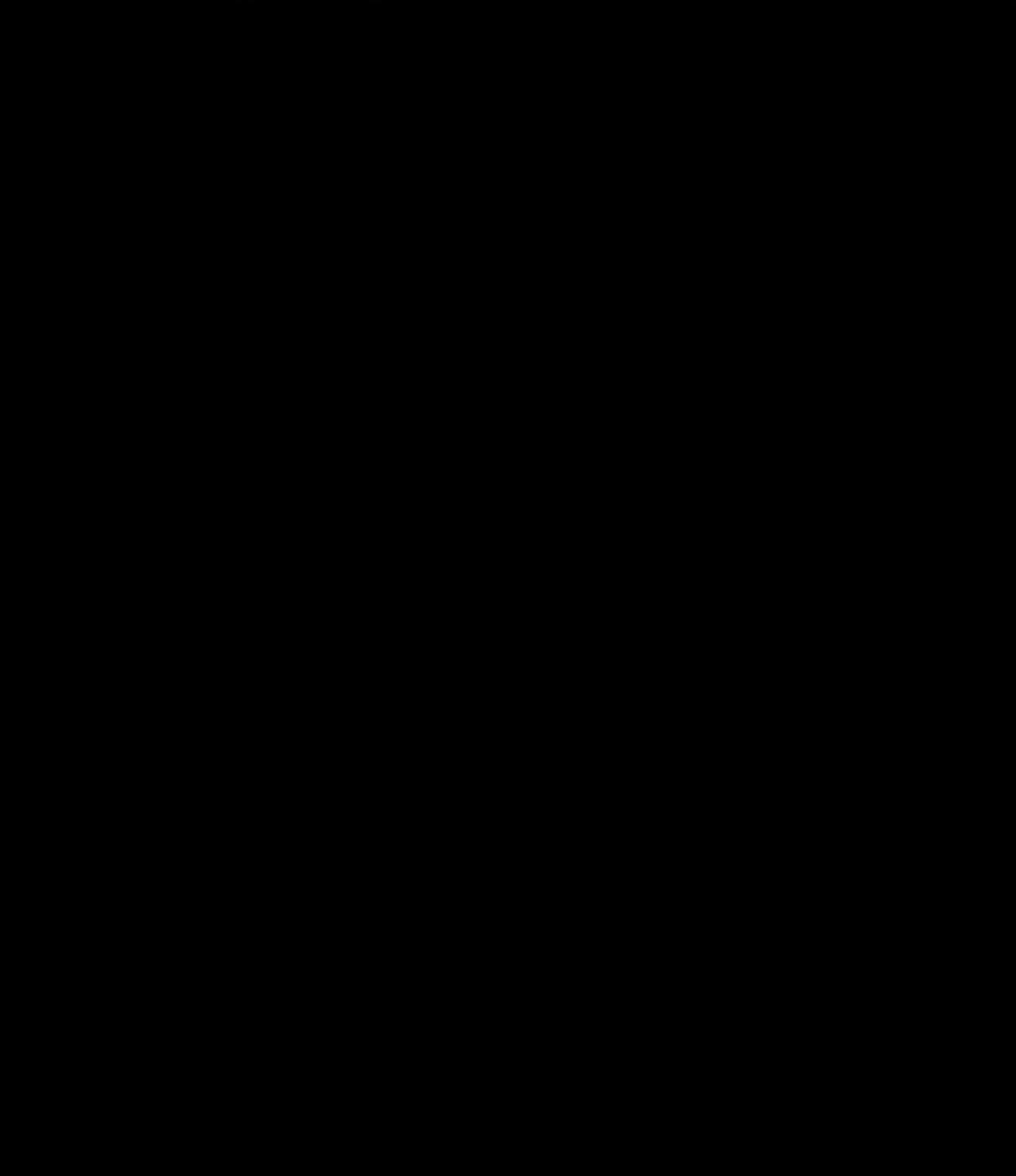
Our Response

As stated in the in Finding discussion of this report, the onsite Government representative at NRE is responsible for the end item full-up round and DCMA LOD instructs the onsite Government representatives to "Sign off any ADCs as required." These documents do not provide specificity for the onsite Government representatives to perform ADC review and approval. Therefore, JMC should define which DCMA division is responsible for full-up round and Component-level data.

Management Comments

**Commanding General, Joint Munitions Command and
Deputy Chief Operations Officer, Defense Contract
Management Agency Comments**

Commanding General, Joint Munitions Command



Deputy Chief Operations Officer, Defense Contract Management Agency



DEFENSE CONTRACT MANAGEMENT AGENCY

3901 A AVENUE BUILDING 10500
FORT LEE, VA 23801-1809

MEMORANDUM FOR DEPARTMENT OF DEFENSE, INSPECTOR GENERAL, POLICY AND OVERSIGHT

SUBJECT: DOD IG Final Draft Report, "Evaluation of Ammunition Data Cards," January 15, 2016, (Project No. D2015-D000PT-0190)

Attached are the Defense Contract Management Agency comments regarding Recommendations 5, 6, and 7 to the subject draft report.

The point of contact for our response is [REDACTED]

Deputy Chief Operations Officer
Defense Contract Management Agency

Attachments:
DCMA Response to DODIG Recommendations
DCMA Executive Summary

Deputy Chief Operations Officer, Defense Contract Management Agency (cont'd)

DCMA Comments to DOD IG Final Draft Report, "Evaluation of Ammunition Data Cards," January 15, 2016 (Project No. D2015-D000PT-0190)

DODIG Recommendation 5: Ensure MIL-STD-1168 B and C requirements are incorporated in the Quality Assurance Surveillance Plan for the ammunition data card process.

DCMA Response: Concur with comment

Currently, there are no current contracts administered by DCMA that incorporate Mil-STD 1168 Rev C requirements.

DODIG Recommendation 6: For manufacturing facilities with DCMA on-site Government representatives, develop methods to verify that the data for all components on the ammunition data cards comply with MIL-STD-1168, the Ammunition-Data Repository Program User Manual, and contractual requirements.

DCMA Response: Concur

DODIG Recommendation 7: Train DCMA on-site Government representatives to improve oversight of the ammunition data card approval process. Train DCMA on-site Government representatives on the MIL-STD-1168C requirements.

DCMA Response: Concur

Deputy Chief Operations Officer, Defense Contract Management Agency (cont'd)

DCMA Comments to DOD IG Final Draft Report, "Evaluation of Ammunition Data Cards," January 15, 2016 (Project No. D2015-D000PT-0190)

Executive Summary:

Below is the Defense Contract Management Agency's (DCMA) response to the Department of Defense Inspector General (DODIG) final draft report entitled "Evaluation of Ammunition Data Cards (ADCs)," January 15, 2016 (Project NO. D2015.D000PT0190). This final draft report is a follow-on to the initial report issued to DCMA and the Joint Munitions Command (JMC) in October of 2015.

DCMA has concerns about New River Energetics are specifically about: how the errors were defined during the interviews, the validity of the extrapolated error data, and how the requirement was derived for using Certificates of Conformance (COCs) as the only means to populate and determine accuracy of ADCs.

Regardless of the disparities noted below, DCMA concurs with the recommendations to the overall process.

Disparity Regarding Certificates of Conformance:

DoDIG: Report Page i, paragraph 1.b, "Recommendations"; Report Pages 10 & 11 paragraph "Certificate of Conformance"; Report Page 12 #7 footnote; Report Page 13 paragraph "The Use of CoCs to Verify ADC Accuracy"; Report Page 19 continuation of paragraph "Inadequate Review of ADCs by the On-site Government Representatives"; Report Page 19 paragraph "Conclusion", Report Page 20 paragraph "Recommendation" 1.b; Report Page 25 Table 3 "The Projection Results", Report Page 26 "Acronyms and Abbreviations"

DCMA Response:

Throughout the report an emphasis is made on the use of Certificates of Conformance (CoCs) as a requirement in MIL-STD-1168B and as a contractual requirement. It is incorrect to suggest that Certificate of Conformance documents should be used to populate or determine ADC accuracy.

The CoC documents used by the ammunition manufacturers are in fact "Certificates of Compliance" or statements of quality. A Certificate of Compliance is a document provided by a supplier that indicates an item meets Technical Data Package (TDP) requirements. The certificates used by the suppliers reviewed by the IG, are Certificates of Compliance rather than Conformance, attesting to the compliance of the product provided.

On the other hand, a "Certificate of Conformance" is a statement by a supplier that indicates that the material represented by the certificate meets the applicable specification requirements of a purchase order. A Certificate of Conformance is included in a contract by the use of FAR 52.246-15, Certificate of Conformance. A decision is made by the administering office as to whether to approve the use of a Certificate of Conformance based on contractor performance and associated risks. Use of a Certificate of Conformance can allow the release of product from the

Deputy Chief Operations Officer, Defense Contract Management Agency (cont'd)

DCMA Comments to DOD IG Final Draft Report, "Evaluation of Ammunition Data Cards," January 15, 2016 (Project No. D2015-D000PT-0190)

supplier's facility without inspection at source. It is for this reason that it is rare that a JMC contract would contain the FAR clause for a Certificate of Conformance.

DoDIG: Report Page 12, footnote #7; "NRE is a subcontractor of Orbital ATK located in Plymouth, Minnesota, and is solely responsible for loading, assembling, and packing medium caliber ammunition. NRE does not maintain CoCs from the various Orbital ATK suppliers because it does not have direct contractual relationships with those suppliers. Orbital ATK maintains all CoCs from its subcontractors."

DCMA Response: This is considered fully acceptable by DCMA and JMC. No other review of surveillance activities/process reviews/etc. for the verification of accuracy and completion of ADCs was conducted by the Audit Team

DoDIG: Report Page 13 paragraph "The Use of CoCs to Verify ADC Accuracy", Page 19 continuation of paragraph "Inadequate Review of ADCs by the On-site Government Representatives", Page 19 paragraph "Conclusion", Page 25 Table 3 "The Projection Results" (Page 11 paragraph "Certificate of Conformance", Page 13 paragraph "The Use of CoCs to Verify ADC Accuracy")

DCMA Response: In the report, it is claimed the CoC does not match the ADC. The report also states that all three of the manufacturers use the CoC data to populate the ADCs. It is incorrect to suggest that CoCs are used to populate ADCs.

Disparity regarding data collection method:

DoDIG: Report Page 12 paragraph "Discussion"

DCMA Response:

The Audit Team visited the New River Energetics (NRE) Corporation and appeared to be concerned that all levels of CoCs were not available at the subcontractor level. Component level CoCs are not maintained at NRE (Subcontractor), they are maintained by the Prime Contractor, Orbital – ATK.

Disparity regarding role of the DCMA QAR at NRE:

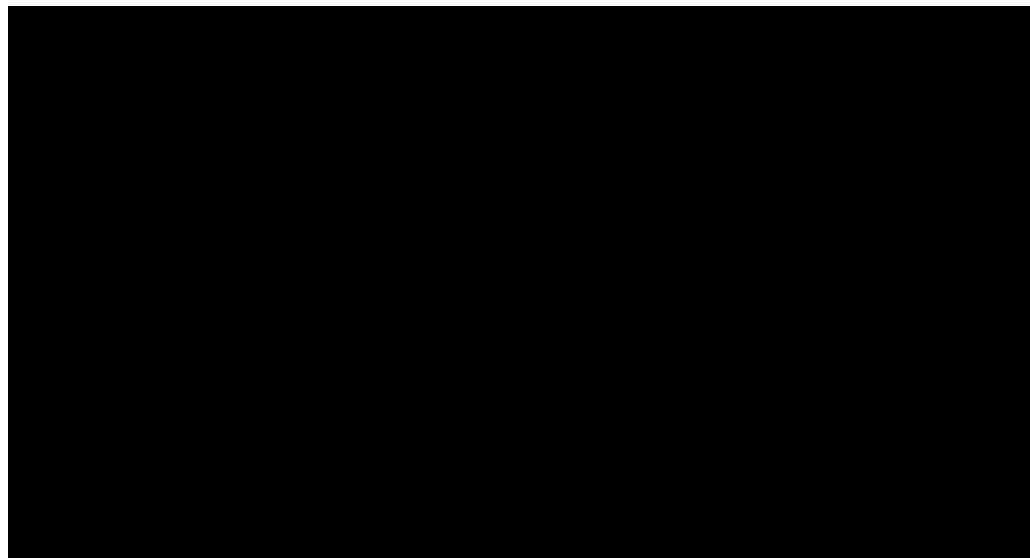
DoDIG Report (Report Page 19, Inadequate Review of ADCs by the On-site Government representatives, 3rd paragraph): At Radford, VA, NRE, the on-site Government representatives did not have the necessary data to verify the accuracy of the ADCs, as this data was maintained at another location. Furthermore, the NRE contracts that were reviewed contained requirements for ADCs to include specific components and for those components to have their own ADCs. However, the ADCs reviewed for this contract did not always include the required component data.

Deputy Chief Operations Officer, Defense Contract Management Agency (cont'd)

DCMA Comments to DOD IG Final Draft Report, "Evaluation of Ammunition Data Cards," January 15, 2016 (Project No. D2015-D000PT-0190)

DCMA Response:

DCMA's QAR reviews and assures that the accuracy of full up rounds is complete in accordance with contract requirements. NRE is a load assembly and pack facility and produces the full-up round 30MM PGU 332 A/E. The contract requirements in contract [REDACTED] (which was the sample selected)



A review of a randomly selected ADC from the contract [REDACTED], Lot Number [REDACTED] shows that all items, as required by the contract were listed and verified.

Part of the NRE on-site Government representative's role in the ADC process is to verify that the contractor's Production Control develops manufacturing build cards from the contract. These build cards list the components, including revision and lot number, to be used in munition production. The build cards are also used to develop draft ADCs. During the production of the ammunition lot, the flow card follows the lot and is used to record the quantity of components used in that lot. Upon lot completion the ADC is updated with component quantities and is provided to the QAR, who ensures the ADC has all fields filled-in and then approves the ADC.

Deputy Chief Operations Officer, Defense Contract Management Agency (cont'd)

DCMA Comments to DOD IG Final Draft Report, "Evaluation of Ammunition Data Cards," January 15, 2016 (Project No. D2015-D000PT-0190)

Disparity regarding error aggregation

Stratum (Contracts)	Stratum Size	Sample Size	ADC Front Data					Component Level									
			Delinquent Sammle ADC	Drawing Number and Revision Errors	Wrong Drawing/Spec Format	Wrong Gov. Representative Disposition	Wrong Lot Number Format	Wrong Quantity	C&C Traceability	Date Errors	Drawing Number Errors	Drawing Revision Errors	Incorrect Component Name	Lot Number Errors	Manufacturer Identification Error	Missing Component	No ADC exists for Energetics
260	30		4	3					234	125	7	152		42	11	1	83
60	20		2						107	59				16	4		8
441	50		2	2	1				126	38	19	179	1	2	13	66	3
19	19			5					104	1		14				52	
70	20	2						1	43	2	24	30		1	1	16	1
14	14								95	4	2	1			52	39	
12	12								64			8			42	62	2
19	19								27	17		49				24	
5	5								13			3		11			
900	189		2	8	5	5	1	1	760	244	52	436	1	72	28	95	268
																	89

For DCMA administered Contracts [REDACTED], no deficient entries were found in the ADC Front Data section (in the chart above) referring to the Full-Up Round. Component level entries will be reviewed and investigated, however NRE DCMA QAR is solely responsible for the End item Full-Up Round as outlined in contract requirements.

DCMA will continue to review errors noted on Component Level portion of the chart (*Page 24 Table 2 "Number of Errors for Each Error Type"*) to determine their validity and to attempt to determine from which supplier they may possibly have been generated. These areas will be included in the soon to be developed standardized checklist.

Acronyms and Abbreviations

AAP	Army Ammunitions Plant
ADC	Ammunition Data Card
CoC	Certificate of Conformance
COCO	Contractor Owned Contractor Operated
DCMA	Defense Contract Management Agency
DoD OIG	Department of Defense Office of Inspector General
ECP	Engineering Change Proposal
FAR	Federal Acquisition Regulation
GOCO	Government Owned Contractor Operated
GOGO	Government Owned Government Operated
IPT	Integrated Product Team
IQUE	In-Plant Quality Evaluation
ISO	International Organization for Standardization
JMC	Joint Munitions Command
LOD	Letter of Delegation
MHP	Munition History Program
MIL-STD	Military Standard
NOR	Notice of Revision
NRE	New River Energetics
PCO	Procuring Contract Officer
PQM	Product Quality Manager
QALI	Quality Assurance Letter of Instruction
QAR	Quality Assurance Representative
QASP	Quality Assurance Surveillance Plan
QMD	Quantitative Methods Division
SPIRNET	SECRET Internet Protocol Router Network
WARP	Worldwide Ammunition-data Repository Program



Whistleblower Protection

U.S. DEPARTMENT OF DEFENSE

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